after final amended claims 1-20 are entered
/TN/

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Previously Presented) A rotor for a permanent-magnet electrical machine, comprising:

an axle mounted to the machine with bearings;

a rotor pack made of iron and arranged around the axle; and

permanent magnets adapted to the rotor pack, the permanent magnets forming a plurality of magnetic poles and being configured to maximize magnetic flux density at the respective centers of the plurality of magnetic poles and decrease the magnetic flux density towards the respective edges of the plurality of magnetic poles, wherein:

each of the plurality of magnetic poles have a first edge and a second edge located close to the outer circumference of the rotor, and slots in the rotor on the route of the magnetic flux extending from close to the first and second edges essentially towards the center of each of the plurality of magnetic poles, and

the slots are closer to the outer circumference of the rotor than the central axle of the rotor.

2. (Previously Presented) A rotor according to claim 1, wherein:

the slots are located at a distance from the outer circumference of the rotor.

3. (Previously Presented) A rotor according to claim 1, wherein:

the permanent magnets are arranged in a V-shape so that the magnets extend to the vicinity of the outer circumference of the rotor and that the magnets forming a single pole are closer to each other at the end towards the axle than at the end towards the outer circumference.

4. (Previously Presented) A rotor according to claim 1, wherein:

the slots extend from the first and second edge towards the center of each of the plurality of magnetic poles essentially parallel with the outer circumference of the rotor.

5. (Previously Presented) A rotor according to claim 1, wherein:

the width of at least one slot decreases towards the center of each of the magnetic poles.

6. (Previously Presented) A rotor according to claim 1, wherein:

the ends of at least one the slots are located towards the center of each of the magnetic poles is curved towards the axle.

7. (Previously Presented) A rotor according to claim 1, wherein:

the slots extend from the edge of the pole essentially towards the center of each of the magnetic poles are on the outer circumference of the rotor.

8. (Currently Amended) ~~A rotor according to claim 1,~~ A rotor for a permanent-magnet electrical machine, comprising:

an axle mounted to the machine with bearings;

a rotor pack made of iron and arranged around the axle; and

permanent magnets adapted to the rotor pack, the permanent magnets forming a plurality of magnetic poles and being configured to maximize magnetic flux density at the respective centers of the plurality of magnetic poles and decrease the magnetic flux density towards the respective edges of the plurality of magnetic poles, wherein:

each of the plurality of magnetic poles have a first edge and a second edge located close to the outer circumference of the rotor, and slots in the rotor on the route of the magnetic flux extending from close to the first and second edges essentially towards the center of each of the plurality of magnetic poles, and

the slots are closer to the outer circumference of the rotor than the central axle of the rotor, wherein:

there are several slots extending from the first and second edges of the pole towards the center of each of the magnetic poles, so that the slots on the same edges of the poles are located at an interval from each other in the radial direction of the rotor and that at least one slot on both edges of each of the magnetic poles are essentially parallel with the outer circumference of the rotor.

9. (Previously Presented) An arrangement according to claim 8, wherein:

the slots closer to the outer circumference of the rotor are wider and/or longer than the slots farther away from the outer circumference of the rotor.

10. (Previously Presented) A rotor according to claim 1, wherein:

the permanent magnets are located on the surface of the outer circumference of the rotor and that the slots are arranged inside the rotor at the positions of the permanent magnets in terms of the radial direction of the rotor.

11. (Previously Presented) A method for manufacturing a permanent-magnet electrical machine to provide an air gap flux having a sinusoidal form, said electrical machine comprising an axle mounted to the machine body with bearings, with said method comprising:

arranging a plurality of rotor poles around the axle, said plurality of rotor poles being made of magnetically conductive iron;

adapting permanent magnets to the rotor; and

forming axial slots in the rotor within at least one of the plurality of rotor poles, the slots being close to the outer circumference of the rotor, and extending from close to a first edge and a second edge towards the center of the at least one of the at least one of the plurality of rotor poles.

12. (Previously Presented) A method according to claim 11, wherein:

the slots are formed by die-cutting.

13. (Previously Presented) A method according to claim 11, wherein:

the slots are formed using a laser.

14. (Previously Presented) A method according to claim 11, wherein:

the slots are formed by drilling axial holes in the rotor.

15. (Previously Presented) A rotor for an electrical machine, comprising:

an axle;

a rotor pack arranged around the axle; and

a plurality of permanent magnet pairs adapted to the rotor pack forming a plurality of magnetic poles, the plurality of permanent magnet poles being arranged in a V-shape having a base-end and a pair of tip-ends, wherein:

the tip-ends of at least one of the plurality of permanent magnet pairs extend close to the outer circumference of the rotor, and the base-end of the at least one of the plurality of permanent magnet pairs is directed towards the axle, and

slots extend from close to the tip-ends toward the other one of the tip-ends on the route of the magnetic flux.

16. (Previously Presented) The rotor of claim 15, wherein:

the slots extend in a direction substantially parallel with the outer circumference of the rotor.

17. (Previously Presented) The rotor of claim 15, wherein:

the width of the slots decrease towards the center of the V-shape.

18. The rotor of claim 15, wherein:

the ends of the slots located towards the center of the at least one of the plurality of permanent magnet pairs is curved towards the axle.

19. ~~The rotor of claim 15,~~ A rotor for an electrical machine, comprising:

an axle;

a rotor pack arranged around the axle; and

a plurality of permanent magnet pairs adapted to the rotor pack forming a plurality of magnetic poles, the plurality of permanent magnet poles being arranged in a V-shape having a base-end and a pair of tip-ends, wherein:

the tip-ends of at least one of the plurality of permanent magnet pairs extend close to the outer circumference of the rotor, and the base-end of the at least one of the plurality of permanent magnet pairs is directed towards the axle, and

slots extend from close to the tip-ends toward the other one of the tip-ends on the route of the magnetic flux, wherein:

a plurality of slots extend from close to the tip-ends, the slots extending towards the center of the of the at least one of the plurality of permanent magnet pairs, so that the slots close to the same one of the tip-ends are located at an interval from each other in the radial direction of the rotor and that at least one slot on both edges of the pole is essentially parallel with the outer circumference of the rotor.

20. (Previously Presented) The rotor of claim 19, wherein the slots closer to the outer circumference of the rotor are wider and/or longer than the slots farther away from the outer circumference of the rotor.